

**IN THE CLAIMS:**

1 1-21. (CANCELLED)

1 22. (PREVIOUSLY PRESENTED) A method for use in an operator initiated graceful  
2 takeover in a computer cluster having a first and second computer, the method compris-  
3 ing the steps of:

4 receiving, at the second computer, an indication that the operator has requested  
5 that the second computer take over for the first computer;

6 requesting, from the second computer, that the first computer shut down;

7 completing service requests at the first computer pending at the time the first  
8 computer was requested to shut down;

9 transferring responsibilities of the first computer to the second computer; and

10 shutting down the first computer.

1 23. (PREVIOUSLY PRESENTED) The method as in claim 22, further comprising:

2 generating the indication as an operator request from within the first computer;

3 and

4 sending the indication from the first computer to the second computer.

1 24. (PREVIOUSLY PRESENTED) The method as in claim 22, further comprising:

2 generating the indication as an operator request from within the second computer.

1 25. (PREVIOUSLY PRESENTED) The method as in claim 22, further comprising: re-  
2 fusing further service requests at the first computer after the first computer was requested  
3 to shut down.

1 26. (PREVIOUSLY PRESENTED) The method as in claim 22, further comprising:  
2 transferring access of a storage device for the first computer to the second computer.

1 27. (PREVIOUSLY PRESENTED) The method as in claim 22, further comprising: as-  
2 serting, at the second computer, disk reservations of disks of the first computer.

1 28. (PREVIOUSLY PRESENTED) The method as in claim 22, further comprising: re-  
2 routing file service requests from the first computer to the second computer.

1 29. (PREVIOUSLY PRESENTED) The method as in claim 22, further comprising: ac-  
2 tivating, at the second computer, network interfaces and network addresses that replicate  
3 those of the first computer.

1 30. (PREVIOUSLY PRESENTED) The method as in claim 22, further comprising: ini-  
2 tiating a countdown timer subsequent to the shut down request from the second computer.

1 31. (PREVIOUSLY PRESENTED) The method as in claim 30, further comprising:  
2 forcing the first computer to shut down in the event the first computer is still operating at  
3 the expiration of the countdown timer.

1 32. (PREVIOUSLY PRESENTED) The method as in claim 22, further comprising: de-  
2 tecting, at the second computer, the shut down of the first computer by the absence of a  
3 periodic heartbeat signal.

1 33. (PREVIOUSLY PRESENTED) The method as in claim 22, further comprising:  
2 storing, at the first computer, state information of the first computer prior to shutting  
3 down.

1 34. (PREVIOUSLY PRESENTED) The method as in claim 22, further comprising:  
2 sending periodic requests from the second computer to the first computer to remain shut  
3 down, after the first computer has shut down.

1 35. (PREVIOUSLY PRESENTED) The method as in claim 22, further comprising: re-  
2 questing, from the first computer, that the second computer restore responsibilities of the  
3 first computer to the first computer.

1 36. (PREVIOUSLY PRESENTED) The method as in claim 22, further comprising: re-  
2 storing responsibilities of the first computer to the first computer upon restart of the first  
3 computer.

1 37. (PREVIOUSLY PRESENTED) The method as in claim 22, further comprising: us-  
2 ing the first and second computers as a file servers.

1 38. (PREVIOUSLY PRESENTED) A storage system capable of performing an operator  
2 initiated graceful takeover, the storage system comprising:  
3 a first computer; and

- 4           a second computer having a processor to
- 5                   i) receive an indication that the operator has requested that the second
- 6                   computer take over for the first computer,
- 7                   ii) request that the first computer shut down,
- 8                   iii) allow the first computer to complete service requests pending at the
- 9                   time the first computer was requested to shut down,
- 10                  iv) take over any responsibilities of the first computer, and
- 11                  v) allow the first computer to shut down.

1   39. (PREVIOUSLY PRESENTED) The storage system as in claim 38, further compris-

2   ing: a processor for the first computer to i) generate the indication as an operator request,

3   and ii) send the indication to the second computer.

1   40. (PREVIOUSLY PRESENTED) The storage system as in claim 38, further compris-

2   ing: the processor of the second computer to generate the indication as an operator re-

3   quest.

1   41. (PREVIOUSLY PRESENTED) The storage system as in claim 38, further compris-

2   ing: a processor for the first computer to refuse further service requests at the first com-

3   puter after the first computer was requested to shut down.

1   42. (PREVIOUSLY PRESENTED) The storage system as in claim 38, further compris-

2   ing:

3           a storage device for the first computer; and

4           an interconnect to transfer access of the storage device for the first computer to  
5     the second computer.

1     43. (PREVIOUSLY PRESENTED) The storage system as in claim 38, further compris-  
2     ing: disks of the first computer, the disks to be reserved by the second computer while the  
3     first computer is shut down.

1     44. (PREVIOUSLY PRESENTED) The storage system as in claim 38, further compris-  
2     ing: an interconnect to reroute file service requests from the first computer to the second  
3     computer.

1     45. (PREVIOUSLY PRESENTED) The storage system as in claim 38, further compris-  
2     ing:

3           network interfaces at the first computer;

4           network addresses at the first computer;

5           network interfaces at the second computer that replicate the network interfaces of  
6     the first computer; and

7           network addresses at the second computer that replicate the network interfaces of  
8     the first computer, the network interfaces and addresses at the second computer that rep-  
9     licate the network interfaces and addresses of the first computer to be activated by the  
10    second computer while the first computer is shut down.

1     46. (PREVIOUSLY PRESENTED) The storage system as in claim 38, further compris-  
2     ing: a countdown timer, the countdown timer to be initiated subsequent to the shut down  
3     request from the second computer.

1 47. (PREVIOUSLY PRESENTED) The storage system as in claim 46, further compris-  
2 ing: an interconnect to force the first computer to shut down in the event the first com-  
3 puter is still operating at the expiration of the countdown timer.

1 48. (PREVIOUSLY PRESENTED) The storage system as in claim 38, further compris-  
2 ing: an interconnect at the second computer to detect the shut down of the first computer  
3 by the absence of a periodic heartbeat signal.

1 49. (PREVIOUSLY PRESENTED) The storage system as in claim 38, further compris-  
2 ing: persistent memory at the first computer to store state information of the first com-  
3 puter prior to shutting down.

1 50. (PREVIOUSLY PRESENTED) The storage system as in claim 38, further compris-  
2 ing: an interconnect at the second computer to send periodic requests to the first computer  
3 to remain shut down, after the first computer has shut down.

1 51. (PREVIOUSLY PRESENTED) The storage system as in claim 38, further compris-  
2 ing: a processor for the first computer to request that the second computer restore respon-  
3 sibilities of the first computer to the first computer.

1 52. (PREVIOUSLY PRESENTED) The storage system as in claim 38, further compris-  
2 ing: an interconnect to restore responsibilities of the first computer to the first computer  
3 upon restart of the first computer.

1 53. (PREVIOUSLY PRESENTED) The storage system as in claim 38, further compris-  
2 ing: the first and second computers are file servers.

1 54. (PREVIOUSLY PRESENTED) A storage system capable of performing an operator  
2 initiated graceful takeover, the storage system comprising:

3 a first computer;

4 a second computer;

5 means for receiving, at the second computer, an indication that the operator has  
6 requested that the second computer take over for the first computer;

7 means for requesting, from the second computer, that the first computer shut  
8 down;

9 means for completing service requests at the first computer pending at the time  
10 the first computer was requested to shut down;

11 means for transferring responsibilities of the first computer to the second com-  
12 puter; and

13 means for shutting down the first computer.

1 55. (PREVIOUSLY PRESENTED) A computer readable media, comprising: the com-  
2 puter readable media containing instructions for execution in a processor for the method  
3 of,

4 receiving, at a second computer, an indication that an operator has requested that  
5 the second computer take over for a first computer;

6 requesting, from the second computer, that the first computer shut down;

7 completing service requests at the first computer pending at the time the first  
8 computer was requested to shut down;

9           transferring responsibilities of the first computer to the second computer; and  
10           shutting down the first computer.

1    56. (CANCELLED)